

mixture was blended into homogeneous slurry, poured into a flat dish and allowed to solidify at room temperature for about 5 minutes. The resulting product was further dried at about 50°C for about 20 hours, after which it was ground and sieved to obtain powders within a size range of about 106 to 180 microns. In the next step, the powders were fed into a vertical heated tube furnace at an approximate feed rate of about 0.14 grams/min. The gas flow inside the tube furnace is about 1 litre of air plus 3 litres of nitrogen per minute. The constant temperature zone of the furnace was adjusted to provide residence times from less than a second to approximately few seconds at the peak firing temperatures. The foamed microspheres were collected on a funnel shaped collecting device covered with a fine mesh screen positioned at the bottom part of the furnace. A mild suction was applied to the end of funnel to aid in collecting the microspheres. The products were characterized for particle density (e.g. apparent density), percent of water floatation, and approximate particle diameter distribution. The result is summarized in Table 13. Figure 17 shows the cross section of the product.

Table 12 12C

Temperature (degree C)	Residence time (second)	Apparent density (g/cm ³)	Water float (%)	Size of microspheres (micron)
1300	0.6-1.1	0.65	82	105-220

Example 8

[0117] The compositions (percentage of weight) of synthetic microspheres ("A" and "B") according to one preferred embodiment of the present invention were compared with a sample of commercially available harvested cenospheres. The results are shown in Table 13.

Table 13

Major Oxides	Harvested Cenosphere	Synthetic Microsphere "A"	Synthetic Microsphere "B"
SiO ₂	62.5	58.9	65.8